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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,522	11/14/2006	Congqi Li	CU-5003 RJS	9478
26530 7590 01/28/2009				
LADAS & PARRY LLP				
224 SOUTH MICHIGAN AVENUE				
SUITE 1600				
CHICAGO, IL 60604				
EXAMINER				
ANWAR, MOHAMMAD S				
ART UNIT		PAPER NUMBER		
2416				
MAIL DATE		DELIVERY MODE		
01/28/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/589,522

Applicant(s)

LI, CONGQI

Examiner

MOHAMMAD ANWAR

Art Unit

2416

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Objections

1. Claims 1, 5-6, 9-10, 14-16, 21-23 are objected to because of the following informalities:

In claim 1 line 12 recites "the uplink direction" which lacks antecedent basis.

In claim 5 line 3 recites "the optical network system" which lacks antecedent basis.

In claim 5 line 3 recites "the working path" which lacks antecedent basis. Similar problem exists in claim 5 line 7, claim 6 line 2, claim 9 line 3 and line 9, claim 13 line 5, line 6, line 15, and line 22, claim 14 line 3, line 13, claim 15 line 5, line 8, claim 21 line 2, line 4, line 7

In claim 5 line 3 recites "the backup path" which lacks antecedent basis. Similar problem exists in claim 8 line 8 and line 9, claim 6 line 5, claim 9 line 3, claim 13 line 6, line 11, line 14, line 23, line 26, line 27 and line 32, claim 15 line 8, claim 21 line 3, line 5, line 10 and line 11.

In claim 5 line 13 recites "the uplink direction" which lacks antecedent basis.

In claim 6 line 4 recites "the local add modes" which lacks antecedent basis. Similar problem exists in claim 10 line 2, claim 14 line 6, line 14, and line 19.

In claim 6 line 6 recites "the express modes" which lacks antecedent basis.

In claim 9 line 3 recites "the optical network system" which lacks antecedent basis.

In claim 9 line 9 recites "the local add path" which lacks antecedent basis. Similar problem exists in claim 10 line 2, claim 14 line 21, and claim 23 line 2.

In claim 13 line 13 recites "uplink direction" which lacks antecedent basis. Similar problem exists in claim 13 line 14, line 27, line 32 and line 33, claim 21 lines 6-7, claim 22 line 8, line 9, line 21, and line 25.

In claim 14 lines 4-5 recites "the local drop modes" which lacks antecedent basis.

In claim 14 line 8 recites "the express modes" which lacks antecedent basis.
Similar problem exists in claim 14 line 22.

In claim 14 line 11 recites "the unidirectional service drop" which lacks antecedent basis.

In claim 14 line 18 recites "the unidirectional service add" which lacks antecedent basis.

In claim 14 line 18-19 recites "the unidirectional service transmission-reception node" which lacks antecedent basis.

In claim 15 line 3 recites "the transmission optical fiber" which lacks antecedent basis.

In claim 15 line 7 recites "the optical signals" which lacks antecedent basis.

In claim 15 line 9 recites "the optical fiber" which lacks antecedent basis.

In claim 16 line 3 recites "the express processing" which lacks antecedent basis.

In claim 21 line 2 recites "the optical network system" which lacks antecedent basis. Similar problem exists in claim 22 line 2.

In claim 21 line 4 recites "the downlink service signals" which lacks antecedent basis. Similar problem exists in claim 21 line 8.

In claim 21 lines 9-10 recites "the local uplink service signals which lacks antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-12 and 21-23 are rejected under 35 U.S.C. 102(e) as being unpatentable by Fang (U.S. PGPub. No. 2004/010901).

For claims 1, 5 and 9, Fang discloses two switches (See Figure 10(600,605)), each of which has two input ports and one output port (see Figure 1 (710,720,750,760)), and one of the input ports can be connected to the output port under the control of the switch (see Figure 1 A, 30); wherein, one input port of the first switch connects to a downlink direction of the working path (see Figure 6 (400,410, 415,440 and 460) shows switch with west side and east side OADMs where 400 is a west side OADM and input port 410 is connected to downlink working path transceiver), the other input port

connects to the downlink direction of the backup path (see Figure 6 (405, 430,436,445,460) shows east side OADM 405 which shows connection to protection path) and the output port connects to a local drop path (see Figure 6 (415) and Figure 7A (551); one input port of the second switch (see Figure 8 which shows multiple switches e.g. switch 610 is selected as a second switch for this purpose) connects to a local add path (see Figure 8 switch 610 with solid lines), the other input port connects to the downlink direction of the backup path (see Figure 8 switch 610 with dotted lines) and the output port connects to the uplink direction of the backup path (see Figure 8 610 with output arrow which shows connection to backup path) and the local add path is connected with the uplink direction of the working path at the same time (see Figure 7A (551)).

For claims 2, 6 and 10, Fang disclose wherein, under normal modes of the device, the input port, which connects to the downlink direction of the working path, of the first switch, is connected to the output port of itself (see Figure 6,(410,415,440,460) shows port 410 connection of output port 410); under local drop modes, the input port, which connects to the downlink direction of the backup path, of the first switch, is connected to the output port of itself (see Figure 6 (430,436,445) shows input port 430 connected to output port 430 through protection path) ; under local add modes, the input port, which connects to the local add path, of the second switch, is connected to the output port of itself (see Figure 8 where switch 600 is connected to switch 610 and the input port from switch 600 to the switch 610 shows add path connection and output port connection) and under express modes, the input port, which connects to the downlink

direction of the backup path, of the second switch, is connected to the output port of itself (see Figure 7A (252,562,552, a connection of express modes in the downlink direction).

For claims 3, 4, 7, 8, 11 and 12, Fang discloses both of the first and the second switches are optical switches; and, the first switch is an electric switch in an Optical Transformation Unit (OTU), and the second switch is an optical switch; and, the first switch is a logical switch, and the second switch is an optical switch (see Paragraph 19 lines 1-3).

For claim 21, Fang discloses controlling the first switch to receive the downlink service signals from the working path or the backup path when receiving the signals (see Figures 6, 7A and 7B, shows signal flows from working path and backup path); transmitting the uplink service signals from the local device respectively to the uplink direction of the working path and one of the input ports of the second switch when transmitting the signals (see Figure 6 where the protection signal is transmitted to second switch); and controlling the second switch to choose one path of the signals from the local uplink service signals and the downlink service signals from the backup path, and input the selected signals to the uplink direction of the backup path (see Figure 6 switch 405 signals flow downlink and uplink in protection mode.

For claim 22, Fang disclose setting two switches (see Figure 6 (400,405) , in the node of the optical network system (paragraph 19 lines 1-3), for each working path and its backup path which pass through the node (see Figure 6 working and backup paths) ,

each of the switches has two input ports (see Figure 6 (410,420,430)), wherein, one input port of the first switch connects to a downlink direction of the working path (see Figure 6 (410,415,440 and 460)), the other input port connects to the downlink direction of the backup path (see Figure 6 (430,436,445,460)), and the output port connects to a local drop path (see Figure 7A (551)); one input port of the second switch connects to a local add path (see Figure 7A (561)), the other input port connects to the downlink direction of the backup path (see Figure 7A (410,416,445,470)) and the output port connects to the uplink direction of the backup path (see Figure 6 (430,436,445,460)) ; the local add path is connected with the uplink direction of the working path at the same time (see Figure 7 A (551,561)); under normal modes, the input port, which connects to the downlink direction of the working path, is connected to the output port of itself, under the control of the first switch (see Figure 6 (410,415,440,460)); the signals from the downlink direction of the backup path are input to the local drop path through the first switch (see Figure 6 (410,416,455,470)); the signals from the local add path are directly input to the uplink direction of the working path (see Figure 6 (460,440,415,410)); if the node needs to enter the local drop modes, the input port, which connects to the downlink direction of the backup path, is connected to the output port of itself, under the control of the first switch (see Figure 6 which shows input port 410 connected to output port through protection path); the signals from the downlink direction of the backup path are input to the local drop path through the first switch (see figure 6 which shows an input port 410 signals going through protection path); if the node needs to enter the local add modes, the input port, which connects to the local add path, is connected to

the output port of itself, under the control of the second switch (see figure 7A); the signals from the local add path are input to the uplink direction of the backup path through the second switch (see Figure 6 where the signals are going from the protection path on switch 405); if the node needs to enter the express modes, the input port, which connects to the downlink direction of the backup path, is connected to the output port of itself, under the control of the second switch (see Figures 7A,7B which shows connection of express mode); the signals from the uplink direction of the backup path are input to the downlink direction of the backup path through the second switch (see Figures 7A and 7B).

For claim 23, Fang discloses controlling the second switch to open the input port, which connects to the local add path (see Figure 11) port under the normal working modes (see Figure 11 normal mode configuration) .

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al. (U.S. PGPub. No. 2004/010901) in view of Waverka et al. (U.S. Patent No. 7,356,258 B1).

For claims 13 and 14, Fang discloses wherein bi-directional service transmission-reception node in the system comprises two identical switch devices, each of which connects with the working path and the backup path of the working path in one direction by the same connection method (see Figure 6), and each of the connection switching device comprises: two switches (see Figure 8 which shows each node has two devices), each of which has two input ports and one output port (see Figure 6 which shows an example of input and output ports), and one of the input ports can be connected to the output port under the control of the switch (see Figure 6, 410,440,460, the fiber switch can be configured with one, two or multiple input ports and one, two or multiple output ports as needed and can be switched from one input port to one output port or multiple output ports); one input port of the first switch connects to a downlink direction of the working path (see Figure 6 working path), the other input port connects to the downlink direction of the backup path (see Figure 6 protection path), and the output port connects to a local drop path (see Figure 7A (551) which shows a local drop path to output port); one input port of the second switch connects to a local add path (see Figure 6 (435,450,470) which shows a second switch input port connected to working path), the other input port connects to the downlink direction of the backup path

and the output port connects to the uplink direction of the backup path (see Figure 6A, where the input port can also be connected to backup path); the local add path is connected with the uplink direction of the working path at the same time (see Figures 7A, 7B which shows local path connected to the working path). Fang disclose all the subject matter but fails to mention an unidirectional service transmission-reception node in the system comprises one connection switching device used for unidirectional service drop, and one connection switching device used for unidirectional service add; the connection switching device used for unidirectional service drop comprises: a first switch, which has two input ports and one output port, and one of the input ports can be connected to the output port under the control of the switch; one input port of the first switch connects to a downlink direction of the working path, the other input port connects to the downlink direction of the backup path, and the output port connects to a local drop path; a second switch, which has one input port and one output port, and the input port can be open or close to the output port under the control of the switch; the input port of the second switch connects to the downlink direction of the backup path, the output port connects to the uplink direction of the backup path; and the connection switching device used for unidirectional service add comprises: one switch, which has two input ports and one output port, and one of the input ports can be connected to the output port under the control of the switch; one input port of the switch connects to the local add path, the other input port connects to the downlink direction of the backup path, and the output port connects to the uplink direction of the backup path; the local add path is connected to the uplink direction of the working path at the same time.

However, Waverka et al. from a similar field of endeavor disclose an unidirectional service transmission-reception node in the system (see Figure 2A) comprises one connection switching device used for unidirectional service drop, and one connection switching device used for unidirectional service add (see column 10 lines 3-6 where the devices can be used for adding or dropping of signal channels therefore one device could be used for adding and the other could be for dropping channels); the connection switching device used for unidirectional service drop comprises: a first switch, which has two input ports and one output port (see Figure 3A, column 10 lines 14-15, column 10 lines 38-41 which describes that the optical can have one or multiple input port connected to one or multiple output ports), and one of the input ports can be connected to the output port under the control of the switch (see column 10 lines 38-41); one input port of the first switch connects to a downlink direction of the working path (see Figure 17A which shows a working path), the other input port connects to the downlink direction of the backup path, and the output port connects to a local drop path (see Figure 17B which shows a protection path); a second switch, which has one input port and one output port (see Figure 3A, column 10 lines 14-15, column 10 lines 38-41 which describes that the optical can have one or multiple input port connected to one or multiple output ports), and the input port can be open or close to the output port under the control of the switch (see column 10 lines 38-41); the input port of the second switch connects to the downlink direction of the backup path (see Figure 17B which shows a protection path), the output port connects to the uplink direction of the backup path (see Figure 17B which shows a protection path); and the connection switching device used

for unidirectional service add comprises (see column 10 lines 3-6 where the devices can be used for adding or dropping of signal channels therefore one device could be used for adding and the other could be for dropping channels): one switch, which has two input ports and one output port (see Figure 3A, column 10 lines 14-15, column 10 lines 38-41 which describes that the optical can have one or multiple input port connected to one or multiple output ports), and one of the input ports can be connected to the output port under the control of the switch (see Figure 3A, column 10 lines 14-15, column 10 lines 38-41 which describes that the optical can have one or multiple input port connected to one or multiple output ports); one input port of the switch connects to the local add path (see column 10 lines 3-6 where the devices can be used for adding or dropping of signal channels therefore one device could be used for adding and the other could be for dropping channels), the other input port connects to the downlink direction of the backup path, and the output port connects to the uplink direction of the backup path (see Figure 17B which shows a protection path); the local add path is connected to the uplink direction of the working path at the same time (see Figures 7A, 7B which shows local path connected to the working path). Thus, it would have been obvious to one ordinary skill in the art at the time of invention was made to include Weverka et al. unidirectional scheme into Fang bidirectional scheme. The method can be implemented in the fiber and optical switches. The motivation of doing this is to provide uninterrupted by communication across optical networks (see Column 2 lines 39-46).

For claim 14, Fang discloses wherein, as to connection switching device in the bi-directional service transmission-reception node in the system, under the normal

modes, the input port, which connects to the downlink direction of the working path, of the first switch, is connected to the output port of itself (see Figure 6 (410,415,440 and 460) which shows a path input and output ports working path); under the local drop modes, the input port, which connects to the downlink direction of the backup path, of the first switch, is connected to the output port of itself (see Figure 6 (410,416,455, 470 shows a drop mode path of backup connection); under the local add modes, the input port, which connects to the local add path, of the second switch, is connected to the output port of itself (see Figure 6 (430,435,450,470) shows a connection of 430 from the second switch is connected to its working path); under the express modes, the input port, which connects to the downlink direction of the backup path, of the second switch, is connected to the output port of itself (see Figure 7A (252,562,552 which shows express modes connecting a backup path); comprises one connection switching device used for unidirectional service drop (see Figure 1 A(10), and one connection switching device used for unidirectional service add (see Figure 1A (20). Fang discloses all the subject matter but fails to mention as to the connection switching device applied in the unidirectional service drop in the unidirectional service transmission-reception node in the system, under the normal modes, the input port, which connects to the downlink direction of the working path, of the first switch, is connected to the output port of itself; under the local add modes, the input port, which connects to the downlink direction of the backup path, of the first switch, is connected to the output port of itself; under the express modes, the input port of the second switch, is connected to the output port of itself; and as to the connection switching device applied in the unidirectional service add

in the unidirectional service transmission-reception node in the system, under the local add modes, the input port, which connects to the local add path, of the switch, is connected to the output port of itself; under the express modes, the input port, which connects to the downlink direction of the backup path, of the switch, is connected to the output port of itself.

For claim 15, Fang discloses wherein, the node of the system further comprises: at least one Optical Add Drop Multiplexing (OADM) unit, whose input port connects with the transmission optical fiber in the optical network system, and is used for dividing the optical signals input through the optical fiber according to their wavelengths, and then transmitting the signals to the working path and the backup path (see Figures 7A and 7B); and at least one OADM unit, whose output port connects with the transmission optical fiber in the optical network system, and is used for combining the optical signals of different wavelengths output through the working path and the backup path, and then transmitting the signals to the optical fiber (see paragraph 32 lines 1-33).

For claim 16, Fang discloses wherein, the two OADM units, which connect the same optical fiber in the system, are further directly connected with each other through the transmission path, which is used for the express processing on the optical signals which have no interactions with the node (see Figure 6 (400 and 405 two OADMs connected to each other through 420 for express processing)).

For claims 17, 18, 19 and 20, Fang discloses wherein, both of the switches of the device can be one of the three available combinations: both of the first and the

second switches are optical switches; and, the first switch is an electric switch in an Optical Transformation Unit (OTU), and the second switch is an optical switch; and, the first switch is a logical switch, and the second switch is an optical switch (see Paragraph 19 lines 1-3).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pan (U.S. Patent No. 6,968,130 B1) and Weston-Dawkes et al (U.S. Patent No. 7,197,241 B2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMAD ANWAR whose telephone number is (571)270-5641. The examiner can normally be reached on Monday-Thursday, 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick W. Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MOHAMMAD ANWAR
Examiner
Art Unit 2416

/M. A./
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